

FY 2010 RESEARCH PROBLEM STATEMENT

Use this form to submit a problem statement

Macros must be enabled to use this form.

To enable macros, close out form. Reopen form. When asked, click "Enable Macros."

ODOT Research Unit
200 Hawthorne Ave. SE, Suite B-240
Salem, OR 97301-5192

Office Phone: (503) 986-2700
FAX Phone: (503) 986-2844

TITLE ([more info](#))

Expanded, holistic expert system for project-specific selection of project delivery methods

PROBLEM (Description of need) ([more info](#))

Mobility requirements, increasing population, increasing urbanization, and deferred maintenance have created the combined need for substantial amounts of highway improvements in Oregon. Further, the economic downturn has also developed a need for public works to help deal with large unemployment that is expected at least over the next several years.

To resolve these issues, the State of Oregon has committed a significant amount of funds toward public highway projects. In addition, it is expected that the Federal government will also commit large funding toward highway projects. The expectation is that to have the most effect, these projects should be placed into actual construction as quickly as possible.

There will likely be a need to augment ODOT project delivery staff with new staff and with outside consultants to undertake this large volume of projects.

Further, these project deliveries will likely require the use of a variety of project delivery methods, whether methods for delivery organization (CM/GC, Design-Build, General Contractor), procurement methods (Low -Price, A+B, etc.) or other techniques for delivery. Decisions whether to use such methods will need to be made across the large variety of individuals that will be working on these projects.

There will be a need to:

- * Have consistent decision-making among diverse groups;
- * Make delivery method decisions that cause efficient and timely results appropriate to each individual project;
- * Make delivery decisions that are consistent with the highest level of expertise available at ODOT; and
- * Make decisions that balance a wide variety of goals, including timeliness, cost-efficiency, and quality delivery.

PROPOSED RESEARCH, DEVELOPMENT OR TECHNOLOGY TRANSFER ACTIVITY ([more info](#))

This research proposes an augmentation of an earlier, recently completed research project (SPR646), which developed an innovative model for capturing expert ODOT opinion and applying it toward providing recommendation of project delivery methods when timeliness is the predominant project goal.

This research would expand the prior project in two ways:

- * The research would expand the model to mediate among several goals, such as cost and quality, and would provide the flexibility to add other goals as appropriate to ODOT and the specific project; and
- * The research would begin the process of developing (or rather expanding on the earlier) database of expert opinion for selection of project delivery methods.

BENEFITS *(more info)*

Project benefits include:

- * Objective, expert-based selection of project delivery techniques specific to project characteristics AND across multiple goals;
- * Consistent project delivery choices, regardless of the party making the decision, whether in-house or external;
- * More cost efficient, timely delivery of projects;
- * More exposure of alternative project delivery choices to project personnel;
- * A decision model that may be maintained centrally, but provides for distributed, delgated decision-making;
- * Development of a system that will set a lessons-learned benchmark that may be continually improved over time; and
- * The next logical step in capturing and expanding the innovations developed by the previous research.

CONTACT INFORMATION:

Name ¹ :	<i>David N. Sillars, PhD,. Assoc. Professor</i>	Name ² :	<i>John Reidl, Senior Cost Engineer</i>
Address ¹ :	<i>Oregon State University 220 Owen Hall Corvallis, OR 97331</i>	Address ² :	<i>ODOT Technical Services Salem, OR</i>
Email ¹ :	<i>david.sillars@oregonstate.edu</i>	Email ² :	<i>john.j.riedl@odot.state.or.us</i>
Phone ¹ :	<i>541-737-8058</i>	Phone ² :	<i>503-986-3886</i>

Please save a copy of this form for your files. To submit the form, attach a copy of the document to an email and send it electronically to barnie.p.jones@odot.state.or.us.

Internal Use Only

- | | |
|---|--|
| <input checked="" type="checkbox"/> Construction and Maintenance (CM) | <input type="checkbox"/> Geotechnical, Hydraulic and Environment (GHE)al |
| <input type="checkbox"/> Integrated Multi-Modal (IM) | <input type="checkbox"/> Planning and Economic Analysis (PEA) |
| <input type="checkbox"/> Pavements and Materials (PM) | <input type="checkbox"/> Roadway Design and Driver Safety (RDDS) |
| <input type="checkbox"/> Structures (ST) | <input type="checkbox"/> Traffic, Roadway Safety, and ITS (TRS) |

Problem Statement Number: